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**IN THE CLAIMS**

Please cancel claims 1-10.

Please add the following claims.

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- 1 11. (New) A catheter comprising:  
2 a mandrel comprised of a variable stiffness, non-metal material, said mandrel  
3 uniformly tapered from a proximal section to a distal section, and said mandrel adapted to  
4 reinforce said catheter.
- 1 12. (New) The catheter of claim 11 wherein said material is selected from the group  
2 consisting of: polyamides, PEEK, PPS, PEI, PI, and any combination thereof.
- 1 13. (New) The catheter of claim 11 wherein a diameter of said proximal section is  
2 larger than a diameter of said distal section of said uniformly tapered mandrel.
- 1 14. (New) The catheter of claim 11 further comprising an inflatable member  
2 comprising a proximal portion and a distal portion, wherein said distal section of said  
3 mandrel extends past said proximal portion of said inflatable member.
- 1  
2 15. (New) The catheter of claim 14 wherein said distal section of said mandrel  
3 extends past said distal portion of said inflatable member.

1 16. (New) The catheter of claim 11, wherein said mandrel is formed by annealing to  
2 induce a higher crystallinity such that said proximal section is stiffer than said distal  
3 section.

1 17. (New) The catheter of claim 11, wherein said mandrel is formed by necking at  
2 high temperatures such that said proximal section is stiffer than said distal section.

1 18. (New) The catheter of claim 11, wherein said mandrel is formed by taper  
2 extruding such that said proximal section is stiffer than said distal section.

1 19. (New) A catheter comprising:  
2 an outer member;  
3 a hollow inner member extending through said outer member;  
4 an outer lumen between said inner and outer members; and  
5 a mandrel extending through said outer lumen, said mandrel comprised of a  
6 variable stiffness, non-metal material, said mandrel uniformly tapered from a proximal  
7 section to a distal section, and said mandrel is adapted to reinforce said catheter.

1 20. (New) The catheter of claim 19 wherein said material is selected from the group  
2 consisting of: polyamides, PEEK, PPS, PEI, PI, and any combination thereof.

1 21. (New) The catheter of claim 19 wherein a diameter of said proximal section is  
2 larger than a diameter of said distal section of said uniformly tapered mandrel.

1 22. (New) The catheter of claim 19 further comprising an inflatable member  
2 comprising a proximal portion and a distal portion, wherein said distal section of said  
3 mandrel extends past said proximal portion of said inflatable member.

1 23. (New) The catheter of claim 22 wherein said distal section of said mandrel  
2 extends past said distal portion of said inflatable member.

1 24. (New) The catheter of claim 19, wherein said mandrel is formed by annealing to  
2 induce a higher crystallinity such that said proximal section is stiffer than said distal  
3 section.

1 25. (New) The catheter of claim 19, wherein said mandrel is formed by necking at  
2 high temperatures such that said proximal section is stiffer than said distal section.

1 26. (New) The catheter of claim 19, wherein said mandrel is formed by taper  
2 extruding such that said proximal section is stiffer than said distal section.

1 27. (New) A method for making a reinforcing mandrel for a catheter having an  
2 inflatable member at a distal end, the method comprising:  
3 providing a non-metal material mandrel comprising a proximal section and a  
4 distal section; and

5 tapering said mandrel uniformly from said proximal section to said distal section  
6 such that said proximal section is stiffer than said distal section.

1 28. (New) The method of claim 27 wherein said material is selected from the group  
2 consisting of: polyamides, PEEK, PPS, PEI, PI, and any combination thereof.

1 29. (New) The method of claim 27 wherein a diameter of said proximal section is  
2 larger than a diameter of said distal section of said uniformly tapered mandrel.

1 30. (New) The method of claim 27 wherein said distal section of said mandrel  
2 extends past a proximal portion of said inflatable member.

1 31. (New) A method for making a reinforcing mandrel for a catheter having an  
2 inflatable member at a distal end, the method comprising:  
3 providing a non-metal material mandrel comprising a proximal section and a  
4 distal section; and  
5 necking said mandrel at high temperatures such that said proximal section is  
6 stiffer than said distal section and said mandrel is uniformly tapered from said proximal  
7 section to said distal section such that said mandrel is adapted to reinforce said catheter.

1 32. (New) The method of claim 31 wherein said material is selected from the group  
2 consisting of: polyamides, PEEK, PPS, PEI, PI, and any combination thereof.

1 33. (New) The method of claim 31 wherein a diameter of said proximal section is  
2 larger than a diameter of said distal section of said uniformly tapered mandrel.

1 34. (New) The method of claim 31 wherein said distal section of said mandrel  
2 extends past a proximal portion of said inflatable member.

1 35. (New) A method for making a reinforcing mandrel for a catheter having an  
2 inflatable member at a distal end, the method comprising:  
3 providing a non-metal material mandrel comprising a proximal section and a  
4 distal section; and  
5 taper extruding said mandrel such that said proximal section is stiffer than said  
6 distal section and said mandrel is uniformly tapered from said proximal section to said  
7 distal section such that said mandrel is adapted to reinforce said catheter.

1 36. (New) The method of claim 35 wherein said material is selected from the group  
2 consisting of: polyamides, PEEK, PPS, PEI, PI, and any combination thereof.

1 37. (New) The method of claim 35 wherein a diameter of said proximal section is  
2 larger than a diameter of said distal section of said uniformly tapered mandrel.

1 38. (New) The method of claim 35 wherein said distal section of said mandrel  
2 extends past a distal portion of said inflatable member.

1 39. (New) A mandrel for reinforcing a catheter for insertion into a body lumen  
2 comprising:  
3 a non-metal material mandrel comprising a proximal section and a distal section,  
4 said mandrel uniformly tapered from said proximal section to said distal section, and said  
5 mandrel being formed by necking at high temperatures such that said proximal section is  
6 stiffer than said distal section.

1 40. (New) The catheter of claim 39 further comprising an inflatable member with a  
2 proximal portion and a distal portion wherein said distal section of said mandrel extends  
3 past said proximal portion of said inflatable member.

1 41. (New) The catheter of claim 40 wherein said distal section of said mandrel  
2 extends past said distal portion of said inflatable member.

1 42. (New) The catheter of claim 39 wherein said mandrel is formed by necking at  
2 high temperatures and annealing to induce a higher crystallinity such that said proximal  
3 section is stiffer than said distal section.

1 43. (New) The catheter of claim 42 wherein said mandrel is formed by taper  
2 extruding such that said proximal section is stiffer than said distal section.

1 44. (New) The catheter of claim 39 wherein a diameter of said proximal section is  
2 larger than a diameter of said distal section of said uniformly tapered mandrel.

1 45. (New) A mandrel for reinforcing a catheter for insertion into a body lumen  
2 comprising:  
3 a non-metal material mandrel comprising a proximal section and a distal section,  
4 said mandrel uniformly tapered from said proximal section to said distal section, and said  
5 mandrel being formed by annealing to induce a higher crystallinity such that said  
6 proximal section is stiffer than said distal section.

only  
C, 1 46. (New) The catheter of claim 45 further comprising an inflatable member with a  
2 proximal portion and a distal portion wherein said distal section of said mandrel extends  
3 past said proximal portion of said inflatable member.

1 47. (New) The catheter of claim 46 wherein said distal section of said mandrel  
2 extends past said distal portion of said inflatable member.

1 48. (New) The catheter of claim 45 wherein said mandrel is formed by annealing to  
2 induce a higher crystallinity and necking at high temperatures such that said proximal  
3 section is stiffer than said distal section.

1 49. (New) The catheter of claim 48 wherein said mandrel is formed by taper  
2 extruding such that said proximal section is stiffer than said distal section.



1 50. (New) The catheter of claim 45 wherein a diameter of said proximal section is  
2 larger than a diameter of said distal section of said uniformly tapered mandrel.

1 51. (New) A mandrel for reinforcing a catheter for insertion into a body lumen  
2 comprising:  
3 a non-metal material mandrel comprising a proximal section and a distal section,  
4 said mandrel uniformly tapered from said proximal section to said distal section, and said  
5 mandrel being formed by taper extruding such that said proximal section is stiffer than  
6 said distal section.

1 52. (New) The catheter of claim 51 further comprising an inflatable member with a  
2 proximal portion and a distal portion wherein said distal section of said mandrel extends  
3 past said proximal portion of said inflatable member.

1 53. (New) The catheter of claim 52 wherein said distal section of said mandrel  
2 extends past said distal portion of said inflatable member.

1 54. (New) The catheter of claim 51 wherein said mandrel is formed by taper  
2 extruding and necking at high temperatures such that said proximal section is stiffer than  
3 said distal section.